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Subsidiary Body for Scientific and Technological Advice
Fortieth session
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Item 12(c) of the provisional agenda
Methodological issues under the Kyoto Protocol
Land use, land-use change and forestry under Article 3, paragraphs 3 and 4, of the Kyoto Protocol and under the clean development mechanism

Views on specific possible additional land use, land-use change and forestry activities and specific alternative approaches to addressing the risk of non-permanence under the clean development mechanism

Submissions from Parties and admitted observer organizations

1. The Subsidiary Body for Scientific and Technological Advice, at its thirty-ninth session, recalled its invitation[1] to Parties and admitted observer organizations to submit to the secretariat their views on specific possible additional land use, land-use change and forestry activities and specific alternative approaches to addressing the risk of non-permanence under the clean development mechanism, and encouraged them to continue submitting such views until 28 February 2014.[2]

2. The secretariat has received four such submissions from Parties. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the languages in which they were received and without formal editing.[3]

3. In line with established practice, the submission received from an intergovernmental organization and the submission received from a non-governmental organization have been posted on the UNFCCC website.[4]

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[1] FCCC/SBSTA/2013/3, paragraph 143.

[2] FCCC/SBSTA/2013/5, paragraph 108.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

[3] Also available at <http://unfccc.int/5901.php>.

FCCC/SBSTA/2014/MISC.2

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[1] <http://unfccc.int/7482.php>.

* This submission is supported by Albania, Bosnia and Herzegovina, Iceland, Montenegro, Serbia, and the former Yugoslav Republic of Macedonia.

Paper no. 1: Greece and the European Commission on behalf of the European Union and its member States

SUBMISSION BY GREECE AND THE EUROPEAN COMMISSION ON BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES

This submission is supported by Albania, Bosnia and Herzegovina, Iceland, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia

Athens, 27 February 2014

Subject: **Views on specific possible additional land use, land-use change and forestry activities and specific alternative approaches to addressing the risk of non-permanence under the clean development mechanism.**

The EU welcomes this opportunity to submit its views on specific possible additional LULUCF activities under the CDM and specific alternative approaches to addressing the risk of non-permanence under the CDM, to be included in the consideration of modalities and procedures for possible additional LULUCF activities under the clean development mechanism (CDM) and modalities and procedures for alternative approaches to addressing the risk of non-permanence under the CDM. This invitation for submitting views has been included in document FCCC/SBSTA/2013/3, paragraph 143 and document FCCC/SBSTA/2013/L.26, paragraph 5.

The EU is of the view that any amendments to CDM LULUCF projects have to be considered as part of and in relation to the overall CDM review, the LULUCF accounting rules, the "Warsaw Framework for REDD+", and other issues related to mitigation being discussed in the UNFCCC arena (NAMAs, new market mechanisms, non-market approaches,...). It is important to recognize that there is a significant "gap" in mitigation objectives, and consequently, the international carbon market is negatively impacted by problems related to the imbalance between demand and supply. In addition to this, much of the focus during last years has been on progressing in mitigation options at broader scales than project level, in particular, and in relation to LULUCF, REDD+ has been the main focus of attention.

With regard to the longer term perspective, those discussions should also be seen in the context of the potential treatment of the land use sector in the 2015 Agreement.

1. Background

Since Parties started the discussions on the rules for the second commitment period of the Kyoto Protocol, the possibility of including new LULUCF activities under the CDM and revisiting the approach to address the non-permanence of the carbon stocks in these projects has been present. In Durban (2011), the COP/MOP requested the SBSTA to initiate two work programmes: the first one to consider and, as appropriate, develop and recommend modalities and procedures for possible additional LULUCF activities under the CDM, and a second one to consider and, as appropriate, develop and recommend modalities and procedures for alternative approaches to addressing the risk of non-permanence under the CDM.

In the EU's view, the information on possible new activities and on alternative approaches to addressing non-permanence provided by Parties until now is not yet detailed enough to assess the implications of possible inclusion of those new activities or the effects of applying alternative approaches for non permanence. The absence of the workshop on these topics mandated by SBSTA in June 2013 to be held before or in conjunction with SBSTA 39, to address the possible additional LULUCF activities and alternative approaches to addressing the risk of non-permanence under the CDM, has not helped Parties to exchange views.

In Warsaw (SBSTA 39, 2013) Parties had the chance to see some last minute submissions that were more detailed than previous ones, revealing that there could be opportunities for detailed technical discussions on specific activities and approaches for non-permanence.

On this basis, the EU considers that it would be worthwhile to leave the opportunity for discussion open with a view to hearing concrete proposals from other parties having in mind that, as stated in the past, the EU is not seeking the expansion of the LULUCF project activities under the CDM.

This submission contains principles and necessary information that, in the EUs view, are the minimum requirements for analysing the proposals on potential new activities as well as on alternative methods for addressing non-permanence.

2. Principles that should govern the LULUCF projects in CDM

It is the EU position that certain principles should guide LULUCF project activities under the CDM, and that they need to be taken into account when discussing possible new activities or alternative approaches for non permanence in relation with this type of projects. These principles include the following:

- All the existing principles and provisions governing CDM (3/CMP.1), and A/R CDM project (5/CMP.1), including those stating that emissions and removals to be accounted for shall be additional to those that would have happened in the absence of the project activity and that leakage has to be addressed and accounted in timely manner
- Clear rules for long term liabilities of removals and emission reductions achieved via the project activity (clear linkage to non-permanence discussions)
- Benefits related to the mitigation of climate change must be real, measurable, and long-term
- Robust and practical rules and methodologies aimed to facilitate engagement of all countries in the CDM, in particular Least Developed Countries
- Coherence with the political framework for REDD+ and the ability to integrate any relevant CDM LULUCF activity in this framework should be guaranteed, while avoiding any double counting
- Policies in the LULUCF sector are often directed to fulfil basic societal needs (e.g. food security, fuel supply, employment). For this reason the EU supports the development of principles, comparable to those referred to in paragraph 2 of appendix I to decision 1/CP.16 (REDD+ safeguards).
- Respect and conservation of natural forests and biological diversity, as well as other environmental safeguards – also comparable to those referred to in paragraph 2 of appendix I to decision 1/CP.16 (REDD+ safeguards) – should also be considered

- Contribution to sustainable development and avoidance of perverse incentives must be guarantied.

Any proposal of new activities or approaches to address non-permanence should explain how these principles are respected.

3. Information needed to analyse possible New LULUCF Activities under the CDM

As mentioned before, with current rules, only afforestation and reforestation are eligible as LULUCF activities under the CDM.

The EU believes that, in order to have sufficient information available to assess the proposals on possible new activities that could be presented, these proposals should contain, at least, the following information:

- Description of activities, including
  - Baseline scenario: current activities and management practices and the present environmental and social conditions of the areas concerned by the proposed activities in the countries/regions/areas where the activity could take place
  - New activities scenario: management changes proposed and environmental and social impacts of the proposed activities
  - Specify requirements for land eligibility for the proposed activities (how and why the project area would be selected)
  - How do the proposed activities improve sustainable land management
  - Possible leakages and how to minimize them
  - Duration and suggested crediting period of the foreseen projects
- Additionality:
  - the information should explain when projects under new activities are considered to be additional:
  - What is the range of increased sequestration/reduced emissions annually resulting from the proposed activities over the lifetime of the projects
- Scale of activities proposed (small project; normal project; programme of activities; all sector/national)
- Methodologies for monitoring of activities, including pools, gases, timing, etc.
- Risks related to non-permanence of the specific proposed activities
- Impacts: possible social and environmental impacts and ways to reduce/mitigate them.
- Information on the expected co-benefits and perverse incentives that can derive from proposed activities

4. Information needed to analyse possible new approaches for non-permanence

The EU recognizes the existence of advantages and disadvantages associated with the current approach and that it pursues to ensure the environmental integrity of the carbon accounting related to these projects. Alternative approaches to address non-permanence that could be proposed should, at least, improve upon the level of environmental integrity that the current approach has achieved.

The EU believes that proposals on possible alternative ways to address non permanence should explain how these proposed approaches:

- Address the risk of non-permanence in a technically sound and reliable manner, while strengthen permanence and reduce the risks of reversal
- Effectively account for the failure to achieve removals and the reversal of removals
- Ensure long term liabilities of removals and emission reductions achieved via the projects and credits issued
- Secure the integrity of the CDM mechanism.
- Promote mitigation in the land use sector in a sustainable manner, and secure the integrity of accounting.
- Avoid creating a system that transfers obligations into the future.
- Avoid negative impacts or interferences on the performance of REDD+ actions

The type of information that the EU would like to see in relation to alternative approaches to address non-permanence would include:

- who would be responsible/liable for the reversals, in particular in the longer term, and how the avoidance of these reversals is strengthen
- in case of specific requirements (buffers, insurances, etc), detailed information on how they would work
- how would the units issued under the new approach would work:
  - types of units to be generated (if new units have to be created)
  - relation with the registry (need for additional accounts, rules for retirement, expiration, etc.)
  - how to use these credits for compliance (in case there is any specific requirement)

SUBMISSION BY INDONESIA

Land Use, Land-Use Change and Forestry under Article 3, Paragraphs 3 and 4, of the Kyoto Protocol and under the Clean Development Mechanism

Subsidiary Body for Scientific and Technological Advice at its thirty-ninth session, recalling to its invitation in document FCCC/SBSTA/2013/3paragraph 143, encouraged Parties and admitted observer organizations to continue submitting to the Secretariat, their views on specific possible additional LULUCF activities under the CDM and specific alternative approaches to addressing the risk of non-permanence under the CDM, by 28 February 2014.

A. Modalities and procedures forspecific possible additional LULUCF activities under the clean development mechanism (CDM):

1. High density agroforestry with crown cover > 30%

This activity may be carried out on agricultural lands adjoining to villages, on margins of forests, and certain forest category.

Justification for inclusion under CDM: scientific management of these lands improves incomes of households from non-timber forest products. Management includes harvest of non-timber products, and planting of tree and shrub species to enhance crown cover needed for shade grown crops in the understory. Planting is also complemented with assisted natural regeneration. High density agroforestry provides forest products and may serves as buffer zones mitigating drivers of deforestation and forest degradation. Inclusion of this land use category also promotes biodiversity as these areas are a great source of species diversity.

Methodological guidance: approved CDM A/R methodologies can be revised by extending their applicability conditions

Potential in Indonesia: agroforestry system has long been practiced in Indonesia and has high attachement to livelihood issues. The multi-storey nature of agroforestry and long practices in combining trees and crops of different heights on the same piece of land in agroforestry systems have proven to be one of favourable options in addressing both sustainability of natural resources and in addressing livelihood issues for people living in and/or surrounding forest areas in Indonesia. High density agroforestry has great significance for GHG removals by sinks as it covers over 3 million Ha in Indonesia. High density agroforestry with crown cover greater than 30% is similar to forest management, and could be used to improve the management of protection forest where trees are not allowed to be cut, hence, people may harvest only non-timber forest products.

2. *Restoration of wetlands*

Restoration of wetlands includes actions implemented in degraded coastal and inland wetlands that result in the reestablishment of ecological processes and lead to their restoration.

Justification for inclusion under CDM: Coastal wetlands have high carbon stocks. CIFOR and USDA Forest Service 2011 recorded that mangrove forests have four times carbon density than high land tropical forests. Human induced drainage of coastal wetlands adversely affects salt marshes and freshwater tidal marshes. Draining of coastal wetlands is a source of GHG emissions, leads to adverse impacts on water quality. Loss of mangroves is another major coastal wetland loss. Drainage and dredging of inland wetlands such as riparian wetlands, forested swamps and marshes for various purposes are contributors to the loss of inland wetlands. Restoration of coastal and inland wetlands in addition to increasing GHG removals by sinks, also improve biodiversity and ecological processes.

Methodological guidance: IPCC 2013 supplement to AFOLU 2006 guidelines on wetlands can be used to develop methodologies relevant to coastal and inland wetland restoration under the CDM context.

Potential in Indonesia: Indonesia accounts for 3.1 million Ha or approximately 22.6% of the global mangrove ecosystem. About 60% of the Indonesian population lives within radius of 50 km from coastal lines. Hence, mangrove forests play central roles in protecting coastal areas from erosion and abrasion, as the coastal green belt for settlement, and in preventing sea water intrusion to the settlement areas. Nevertheless, among the 3.1 million Ha area of Indonesia's mangrove forests, about 58% are degraded. The increase of degraded mangrove forests may increase vulnerability of the peopleto sea level rise. In both wetlands, the coastal and inland wetland restoration projects have great potentialfor mitigation while also providing livelihoods, water quality, and adaptation co-benefits.

3. *Rewetting of drained peat land*

Rewetting of drained peat lands leads to a reduction in carbon dioxide (CO_2) emissions due to decreased oxidation of soil organic material; and also reduction in nitrous oxide (N_2O) emissions in nutrient-rich peat lands.

Justification for inclusion under CDM: Tropical peat lands contain about 3% of the global soil carbon stocks and at least 20% of global peat carbon. The most significant emissions are from oxidation of drained peat lands. For Annex I countries, rewetting of peat lands drained by anthropogenic actions since 1990 have been included for compliance in the 2nd commitment period of the Kyoto Protocol.

Methodological guidance: IPCC 2013 supplement to AFOLU 2006 guidelines on wetlands; and methodologies under consideration for peat land rewetting for voluntary standards can be relevant.

Potential in Indonesia: Indonesia has more than 20 million Ha peat lands with carbon stocks of approximately 37 Gton and similarly can be the significant sources of GHGs emission. Rewetting can be the potential technique to restore severely degraded peat land where planting and assisted natural regeneration are not possible.

4. Revegetation

Revegetation activities include planting of trees, shrubs, grass or other non-woody vegetation to restore carbon stock of lands that do not qualify as forest land, cropland, grass land, and wetland. It is cost effective option to restore severely degraded lands, settlement, and other lands (e.g. Karst areas in Indonesian context).

Justification for inclusion under the CDM: Revegetation is a cost effective mitigation activity in areas that fall outside of forest land, cropland, grass land, and wetland categories. For example, karst ecosystem arises from rock solubility in natural water that is found elsewhere.

Methodological guidance: Methodologies on implementing revegetation activities need to be approved, taking into account the AFOLU 2006 guidelines.

Potential in Indonesia: Revegetation has potential to restore karst regions which spread over large area in Indonesia (approximately 10% of country land area). Revegetation in karst ecosystem provides co-benefits beyond increasing CO_2 sequestration, for example protection of karst ecosystem, and rehabilitation of degraded lands

B. Revisions to Modalities and Procedures of A/R Project Activities under the CDM (Decision 5/CMP.1) to cover Additional Land Use Activities

General. Modalities and procedurs for A/R (Decision 5/CMP.1) should be expanded to include additional land use activities and the common modalities and procedures (M & P) to be applicable for all land use activities implemented under the CDM. Modalities and procedures specific to individual land use activities should be included as respective appendices to the modalities and procedures. The references to A/R activities in the M&P of A/R should be replaced with land use activities to cover all activities for which the M& P are expanded to cover.

Annex to M&P of A/R (Decision 5/CMP.1) - Section A. Definitions. M&P of A/R (Decision 5/CMP.1) needs to be revised to define all additional land use activities approved for inclusion under the CDM.

Annex to M&P of A/R (Decision 5/CMP.1) – Validation.

- Paragraphs 10 to 24 need to be revised and expanded to cover all additional land use activities defined under the M&P and M&P specific to a land use should be listed in an appendix to the M&P,
- The Appendix B (information to be presented in the project design document) needs to be revised to include information relevant for project activities implemented in all land use activities defined under the M&P.

Annex to M&P of A/R (Decision 5/CMP.1) – Monitoring. Paragraphs 25-26 should be revised to extend the Monitoring Plan of a CDM project activity to cover all land use activities under the M&P.

Annex to M&P of A/R (Decision 5/CMP.1) – Verification.

- Paragraphs 31-34 should be revised to extend the Monitoring Plan of a CDM project activity to cover all land use activities under the M&P.

C. Modalities and procedures for alternative approaches to addressing the risk of non-permanence under the CDM

Approaches to address permanence in other LULUCF projects should be explored for their possibility to be adapted in additional LULUCF-CDM activities, and for drawing lessons from their implementation, including strength and weaknessess of each approach, to allow project developer to chose the most appropriate approach for their projects.

Other than the weaknesses of the TCER approach in A/R CDM, a number of references stated the rationale for alternative approaches to address non-permanence, including as follows: (1) reversal risk profile can be assessed, for example, approaches to address non-permanence risk can be integrated into monitoring system, (2) environmental integrity and economic viability of land use mitigation activities can be balanced with various approaches.

For technical paper prepared by UNFCCC Secretariat, Indonesia views that the following issues related to permanence should be addressed: (1) risk screening (mandatory/voluntary, exemption from risk screening etc), (2) scale of activities (project, program/sub-national, national), (3) permanence period, (4) types of risks, (5) liability for reversals, (6) sharing liability, (7) feasibility of approaches, (8) environmental integrity of approaches, (9) choice among approaches for implementing agencies, (10) consistency among approaches for non-permanence across land use activities, and (11) relation to broad LULUCF mitigation agenda.

Notes :

Source of supporting data and information : CIFOR and USDA Forest Service (2011); Darmawan, W.S (2013); Ministry of Forestry (2013); Haryono, E and Widyastuti, M (2013); Hilwan, I and Kusuma, C (2013); Reddy, R.C (2013); Wetlands International-Indonesia programme (2005, 2007).

SUBMISSION BY MALAYSIA ON VIEWS ON SPECIFIC POSSIBLE ADDITIONAL LAND USE, LAND-USE CHANGE AND FORESTRY (LULUCF)

Malaysia welcomes this opportunity to submit its views on specific possible additional land use, land-use change and forestry (LULUCF) activities and specific alternative approaches to addressing the risk of non-permanence under the clean development mechanism (FCCC/SBSTA/2013/3, paragraph 143; FCCC/SBSTA/2013/5, paragraph 108)

1. Possible additional LULUCF activities

(i) Re-vegetation

Barren land is common post mining activities and often left unmanaged due to lack of financial resources to re-vegetate this areas. In Malaysia, tin mining was an important activity until the 1970s and have significantly contributed to poverty reduction. Once the mining operations cease, large areas of non-vegetation sandy soils are left making it impossible for re-vegetation. Research work on rehabilitation of ex-mining areas has suggested that a phased approach may be necessary. The phased approach starts with the rehabilitation of the soil by planting leguminous plants to enrich the nitrogen and modify the soil properties. This is followed by the planting of shrub and selected trees before the area could be re-vegetated.

Restoration of the wetlands due to coastal erosion is another example of new activity proposed.

(ii) Improved cropland/grassland management

Malaysia sees the potential of improving cropland management by integrating tree planting in pasture lands. The right choice of tree planting in the pastureland will help reduce the greenhouse gas emissions as well soil conservation.

In addition, improved cropland management will also reduce the crop failure and enhance productivity especially amongst small scale grower. In doing so, the pressure to expand agricultural activities into forested areas will be reduced.

Malaysia views that these activities can demonstrate that

- Emissions and removals to be accounted for shall be additional to those that would have happened in the absence of the project activity and that leakage has to be addressed and accounted in timely manner
- Benefits related to the mitigation of climate change must be real, measurable, and long-term
- Robust methodologies as based on science based interventions

2. Non permanence

Ways to overcome non permanence:

- Demonstration of good governance, government policies, historic baselines/risk as well as buffer creation based on projects undertaken
- Good risk assessment and management is demonstrated

Soumission faite par le Sénégal au nom de pays de l'espace CILSS-CEDEAO (Tchad, Mali, Sénégal, Bénin, Burkina Faso, Côte d'Ivoire, Mauritanie, Guinée Conakry, Cap-Vert, Niger, Liberia, Guinée-Bissau, Togo) et du Maghreb (Tunisie, Maroc) soutenant la soumission concernant l'Utilisation des terres, changement d'utilisation des terres et foresterie (UTCAF) au titre de l'article 3, paragraphes 3 et 4, du Protocole de Kyoto et du Mécanisme pour un développement propre (MDP)

***

Cette soumission est faite en réponse à l'article 5 des conclusions FCCC/SBSTA/2013/L.26 du SBSTA39, qui invite les Parties à soumettre leurs vues sur :

- Nouvelles activités UTCAF dans le cadre du MDP ;
- Approches alternatives pour parer au risque de non-permanence dans le cadre du MDP.

Nos vues spécifiques sur ces deux points, exprimées ci-dessous, s'insèrent dans les positions générales défendues par le Groupe Afrique sur le sujet du changement climatique :

- Décision de l'Assemblée de l'Union africaine à sa 20ème session ordinaire, tenue à Addis-Abeba en janvier 2013, relative à la coordination du Comité des Chefs d'Etat et de Gouvernement africains sur le climat et la préparation de l'Afrique pour la COP19/CMP9 ;
- Déclaration de Gaborone sur le changement climatique vision 2015, adoptée par les Ministres africains de l'environnement, réunis à Gaborone en octobre 2013 lors de la 5ème session extraordinaire de la Conférence ministérielle africaine sur l'environnement.

Nouvelles activités UTCAF dans le cadre du MDP

Le MDP présente théoriquement trois séduisants avantages : (i) diminuer les coûts d'abattement pour les pays ou entreprises sous contrainte carbone, (ii) favoriser les transferts de technologie, (iii) favoriser le développement local dans les pays hôtes.

Malheureusement, les projets MDP restent très marginaux en Afrique : moins de 3% de tous les projets MDP au 1er février 2014 (Cf. http://www.cdmpipeline.org/cdm-projects-region.htm#6). La complexité du montage et de la mise en œuvre de tels projets, la faiblesse des capacités locales, ou encore un climat des affaires peu attractif sont parfois mis en avant pour expliquer cela.

En fait, les deux principales raisons de cette marginalisation sont à nos yeux les suivantes :

1. Les économies africaines en général, et sub-sahariennes en particulier, sont très largement « décarbonées » : il y a donc peu de potentiel d'atténuation dans les secteurs de l'énergie, de l'industrie, des transports, etc. Dans le secteur de l'UTCAF, qui emploie la grande masse des populations africaines, seule est prévue la possibilité de faire des projets de boisement/reboisement : le stockage du carbone dans les systèmes agroforestiers n'est donc pas encouragé ;

2. Les projets MDP de boisement/reboisement sont eux-mêmes handicapés par le système de crédits temporaires, qui les rendent très peu attractifs pour les investisseurs et difficilement « traçables », ce qui expliquent en grande partie leur interdiction d'entrée dans le marché

européen du carbone, le principal marché obligatoire à l'heure actuelle. Nous reviendrons en détail sur ce problème dans la 2ème partie de notre soumission.

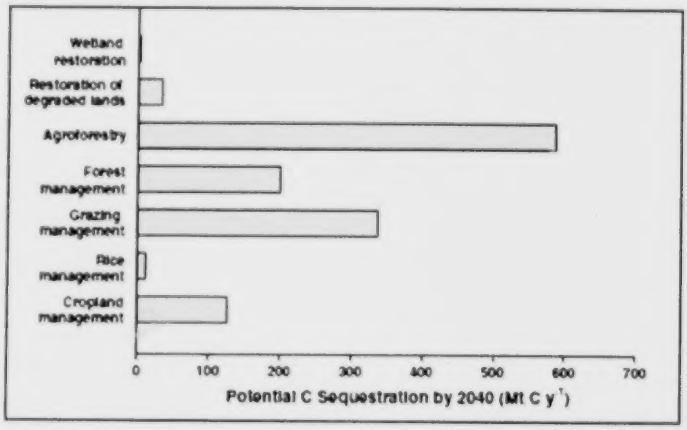
Pour résoudre le premier problème, nous souhaitons que les activités agroforestières puissent devenir éligibles au titre du MDP dans les meilleurs délais.

Par activités agroforestières, nous entendons la mise en place de cultures arborées, haies vives, brise-vents, cultures en couloir, plantations d'oliviers, bandes fourragères, jachères améliorées, etc. : toute activité œuvrant à l'accroissement des quantités de carbone séquestré dans les sols et, en corollaire, à la protection de ces sols et de leur fertilité, des ressources en eau, de la biodiversité et du microclimat.

Tout ceci, concourant, in fine, à l'adaptation des populations locales aux effets des changements climatiques.

Le potentiel de séquestration du carbone des systèmes agroforestiers naturels en Afrique de l'ouest et au Maghreb est intéressant : de 10 à 30 teCO2/ha/an en incluant carbone de la biomasse et carbone organique du sol (Leslie Lipper et al. 2010 ; N.H.BATJES 2001 ; P.L WOOMER et al. 2004), et peut être considérablement amélioré avec les technologies agroforestières.

Le potentiel d'atténuation global est d'ailleurs confirmé de longue date, notamment par le 3ème Rapport d'évaluation du GIEC, dans lequel ont été estimés les potentiels de différentes activités UTCAF (GIEC, 2000)



Les populations rurales africaines elles-mêmes ont aussi compris l'intérêt de l'agroforesterie, en témoignent ces quelques illustrations :

- La Régénération naturelle assistée (RNA) est à l'origine d'une nouvelle révolution verte dans le Sahel. Par exemple, on estime que plus de 5 millions d'hectares de parcs agroforestiers à *Faidherbia albida* (Cf. photos ci-dessous) ont été régénérés depuis 20 ans au Niger, soit 250 000 ha/an (Edwige BOTONI et Chris REIJ 2009).

  A raison de 40 arbres/ha, ce sont plus de 200 millions arbres qui ont été plantés spontanément par les populations, chiffre à mettre en regard des quelques 60 millions d'arbres (taux de survie d'environ 40%) plantés par des projets et l'Etat nigérien (*Ibid*)

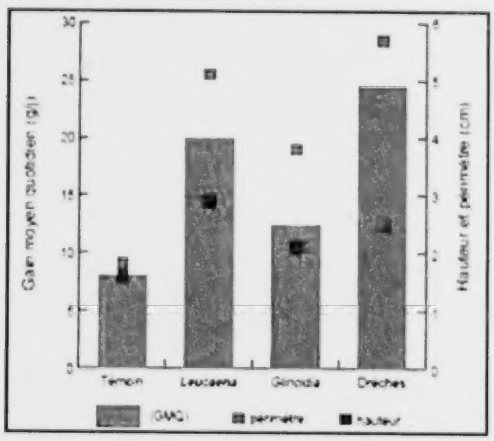
Malgré l'engouement des populations, leur niveau de pauvreté limite le déploiement à plus large échelle de telles activités. La finance carbone permettrait en partie de surmonter cette barrière financière.

- La présence d'arbres dans les terres agricoles fournit aux agriculteurs des sources de revenus alternatives ou complémentaires et accroit également la résistance des systèmes agraires aux chocs liés à la variabilité climatique.

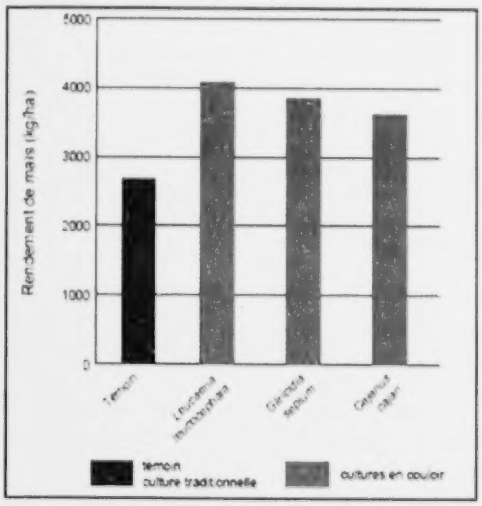
  Ainsi, à l'Ouest du Burkina-Faso, ce sont près de 30 produits de 17 espèces qui sont récoltés : huile, beurre, savon et chenilles de Karité, graines et "Soumbala" de Néré (pate alimentaire), feuille, farine et fruit de Baobab, fruit du Tamarinier, vin de Rônier, etc. Le commerce local des produits procure 100 000 à 200 000 FCFA/an en moyenne à chaque vendeur, l'équivalent du revenu moyen par habitant dans la région (Bonkongou, 2001).

- Enfin, la présence d'arbres dans les terres agricoles permet d'améliorer les rendements agricoles et d'élevage, comme l'illustrent ces deux cas :

Les fourrages ligneux sont de bons compléments, en témoignent les variations de Gain moyen quotidien (GMQ), hauteur au garrot et périmètre thoracique de chevreaux complémentés de fourrages ligneux au Bénin (Nouwakpo et al., 1987) :



Les rendements de maïs dans différents systèmes de culture en couloirs sont sensiblement supérieurs à celui la culture traditionnelle au Bénin (Akonde et al. in Kang et Reynolds, 1990) :



Un autre cas très significatif est celui des plantations d'oliveraies surtout en zone Nord Africaine et particulièrement en Tunisie qui compte actuellement plus de **71 205 781 arbres sur une superficie de 1 743 395 ha** dont plus des 2/3 situés au centre et au sud tunisien, régions affectées par la désertification et l'érosion hydrique et éolienne et ces plantations contribuent fortement à la protection de ces sols et à la lutte contre l'avancement des sables, en plus de la forte valeur économique qu'elles représentent, elles sont considérées comme puits de stockage de carbone non négligeables et méritent d'être prisent en compte. En effet, dans son premier inventaire des GES, la Tunisie avait pris en considération ces plantations d'oliveraies depuis 1994 malgré que les guides lignes de l'IPCC n'aient pas prévue ce genre de plantations. Et d'après le troisième inventaire des GES que la Tunisie est entrain de réaliser pour l'année 2010, les 71 Millions d'oliviers ont une croissance annuelle en biomasse aérienne de **5 293 690 de tonnes** en plus de la biomasse souterraine évaluée **à 2 646 845 tonnes** soit un total en biomasse **de 7 940 534 de tonnes** représentant un stockage **de 6 842 094 t CO2/an.** Et si considère les prélèvements qui sont de l'ordre de **2 008677 t CO2**, le stockage net serait de **4 833 417 tCO2/an,** largement supérieur au stockage du secteur forestier **(stockage net de 1 842 868 tCO2).**
Et comme l'olivier est considéré comme espèce à usages multiples donc agroforesterie, le fait de considérer l'agroforesterie éligible au titre du MDP permettrait aux agriculteurs tunisiens d'avoir un revenu supplémentaire les incitant et les encourageant à planter plus d'arbres sur leurs terres souvent marginales.

Pour terminer sur ce premier point, nous tenons à souligner que nous soutenons les vues déjà exprimées dans différentes soumissions faites sur le même sujet : Chili (en faveur de l'inclusion des activités agroforestière, notamment « cultures améliorées », activités sylvopastorales et revégétalisation des terres dégradées), du Népal au nom des Pays les moins avancées (en faveur de l'inclusion de la revégétalisation des terres) et de la Chine (ouverture à l'inclusion de la revégétalisation des terres).

Approches alternatives pour parer au risque de non-permanence dans le MDP

Comme nous l'avons présenté précédemment, les projets MDP de boisement/reboisement sont handicapés par le système de crédits temporaires, qui les rendent très peu attractifs pour les investisseurs et difficilement « traçables » dans le marché carbone réglementé.

Face à cela, diverses propositions ont déjà été faites, dont la plus répandue est sans conteste l'idée de mettre en place un « buffer » de crédit pour parer au risque de disparition du carbone séquestré. Cette option a même été adoptée et mise en pratique par un standard du marché carbone volontaire (Cf. 2.1.1 de la dernière version des exigences AFOLU/VCS http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%2C%20v3.4.pdf)

Dans les soumissions précédemment évoquées, cette option a d'ailleurs été mise en avant, avec quelques variantes :

- Chili : en faveur d'un système de buffer avec (i) risque supporté par le porteur de projet, (ii) garantie du pays hôte (voire risque supporté par le pays, si le projet est sujet à des perturbations naturelles), et (iii) niveau du buffer calculé après analyse de risque ;

- Népal au nom des Pays les moins avancées : en faveur d'un système de buffer avec (i) risque supporté par le porteur de projet, (ii) garantie du pays hôte ou acheteur (risque supporté par le pays hôte ou acheteur, si le projet est sujet à des perturbations naturelles) ;

- Chine : en faveur d'un système de buffer avec risque supporté par le porteur de projet ou d'un système d'assurance (risque supporté par une entité tierce) ou d'un système de garantie partagée entre le pays hôte ou le pays acheteur, ou système combinant buffer et assurance ou encore buffer et garantie du pays. Le niveau du buffer est calculé après analyse de risque et le projet interdit si l'analyse ex-ante donne un haut niveau de risque. Une clause de « force majeure » doit s'appliquer en cas de perturbations naturelles.

Cette option et ses variantes sont intéressantes et nous souhaitons pouvoir les discuter en détail, tout comme la proposition ci-dessous, qui consiste à payer le carbone séquestré en estimant l'équivalence de sa valeur avec du carbone non émis.

Eviter l'émission d'une teCO2 équivaut à la séquestrer pendant une période de temps infinie. Sur cette base, la formule suivante peut être posée :

$$Valeur_{evitee\ année0} = \sum_{t=0}^{t=\infty} \frac{Valeur_{\ séquestrée\ l'année\ t}}{(1+r(t))^t}$$

Supposons que la valeur d'une teCO2 séquestrée l'année t est constante dans le temps, tout comme le taux d'actualisation, la formule peut être simplifiée comme suit :

$$Valeur_{evitee\ année0} = \frac{1+r}{r} Valeur_{\ séquestrée\ pour\ 1\ an}, \text{ d'où } Valeur_{\ séquestrée\ pour\ 1\ an} = \frac{r}{1+r} Valeur_{evitee\ année0}$$

Si le taux d'actualisation est fixé à 0 (hypothèse adoptée dans le rapport Stern : pleine équité intergénérationnelle), la valeur d'une teCO2 stockée pendant 1 an est nulle. A contrario, si le taux d'actualisation est fixé « haut », par ex 10%, la valeur d'une teCO2 stockée pendant 1 an est égale à 9% de la valeur de l'évitement d'émission d'une teCO2 l'année 0. Pour un taux d'actualisation « moyen » de 4%[1] la valeur d'une teCO2 stockée pendant un an est égale à 3,8% de la valeur de l'évitement d'émission d'une teCO2 l'année 0.

En utilisant cette formule, les paiements pour le stockage de teCO2 peuvent être effectués a posteriori, sur la base de la durée effective de stockage. Plus besoin de crédits temporaires ou de « buffer » ou d'assurance. La seule condition est de s'entendre sur une valeur « conservatrice » pour le taux d'actualisation.

Si nous rémunérons le stockage, non pas pour une durée infinie, mais pour n années (qui peuvent être la durée de vie du projet, par ex 30 ans, ou la durée de chaque période de génération de crédit, par ex 5 ans), nous avons la formule suivante :

$$Valeur_{\ séquestrée\ pour\ n\ années} = \sum_{t=0}^{n-1} \frac{Valeur_{séquestrée\ pour\ 1\ an}}{(1+r)^t} = Valeur_{\ séquestrée\ pour\ 1\ an} \frac{1+r}{r}\left(1 - \frac{1}{(1+r)^n}\right)$$

Sachant que : $Valeur_{\ séquestrée\ pour\ 1\ an} = \frac{r}{1+r} Valeur_{evitee\ année0}$, nous avons alors :

$$Valeur_{séquestrée\ pour\ n\ années} = Valeur_{evitee\ année0}\left(1 - \frac{1}{(1+r)^n}\right)$$

[1] Préconisé par le Rapport Lebegue, 2005 pour les investissements publics français http://catalogue.polytechnique.fr/site.php?id=324&fileId=2389

Par ex, en imaginant un paiement ex-post (effectué après le MRV des teCO2 séquestrées) tous les 5 ans et un taux d'actualisation de 4%, la teCO2 est payée tous les 5 ans à hauteur de 0,178 fois la valeur d'une teCO2 évitée.

Références bibliographiques

Edwige BOTONI et Chris REIJ 2009. La transformation silencieuse de l'environnement et des systèmes de production au Sahel : Impacts des investissements publics et privés dans la gestion des ressources naturelles. Comité permanent Inter- États de Lutte contre la Sécheresse dans le Sahel (CILSS) Centre for International Cooperation (CIS) Université d'Amsterdam. 63p

IPCC 2000. Land Use, Land-Use Change, and Forestry. A Special Report of the Intergovernmental Panel on Climate Change

Leslie Lipper, Celine Dutilly-Diane, and Nancy McCarthy, 2010. Supplying Carbon Sequestration From West African Rangelands: Opportunities and Barriers. Rangeland Ecol Manage 63:155–166 | January 2010 | DOI: 10.2111/REM-D-09-00009.1

N.H.BATJES 2001. Options for increasing carbon sequestration in west African soils: an exploratory study with special focus in Senegal. Land Degradation & Development. Land Degrad. Develop.12: 131-142 (2001) DOI

P.L WOOMER, A TOURE, M SALL, 2004. Carbon stocks in Senegal's Sahel Transition Zone. ELSEVIER. Journal of Arid Environments. Volume 59, Issue 3, November 2004, Pages 499–510